

PRELIMINARY REMARK

The present response is based upon the telephone interview conducted with the Examiner on February 6, 2006.

REMARKS

Amendment to the claims

Claim 1 has been clarified to recite that *"said first well provides an electrical path between said first and second active regions regardless of any a reasonable voltage applied to said circuit"*. Applicants note that this is supported by the specification as filed, for example the last sentence of paragraph [0035], which recites that *"a reasonable voltage refers to any gate voltage found in normal device operation such that the voltage does not break down the gate oxide 21"*. Applicants note that the above amendment of claim 1 is a mere clarification of the term "regardless of a reasonable voltage", and is not a further limitation on the scope of the claim.

No new matter has been added. Applicants expressly reserve the right to prosecute any matter cancelled from the claims in this application or in any derivative thereof.

Rejections under 35 U.S.C. 102

Claims 1 and 5 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,912,053 to Schrantz. Applicants respectfully disagree.

Claim 1

Applicants note that claim 1 has been amended to recite that the first well *"provides an electrical path between said first and second active regions regardless of any reasonable voltage applied to said circuit"*.

Applicants note that the structure of Schrantz is a functional JFET with improved speed and reduced size (column 2, lines 3-4), and that accordingly, as is well known in the art, when the gate-source voltage of the JFET reaches its pinchoff voltage, the channel region 128 has practically infinite resistance, and then no longer provides an electrical path between the sources and drain regions.

Applicants submit that the pinchoff voltage is a reasonable voltage as provided by the application, and that therefore Schrantz cannot be deemed to disclose or suggest that the channel region 128 *"provides an electrical path between said first and second active regions regardless of any reasonable voltage applied to said circuit"*.

Accordingly, Applicants respectfully submit that claim 1 is patentable over Schrantz.

Claim 5

Claim 5 depends on claim 1. Applicants respectfully submit that at least in view of its dependency on claim 1, claim 5 is patentable over Schrantz.

Rejections under 35 U.S.C. 103

Claims 2, 3 and 4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Schrantz in view of U.S. Pat. No. 3,938,620 to Spadea, and claim 6 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Schrantz in view of U.S. Pat. No. 6,373,106 to Maki. Applicants respectfully disagree.

Claims 2, 3 and 4

Claims 2, 3 and 4 depend directly or indirectly on claim 1. Applicants note that the Examiner has failed to show that Spadea shows a structure as recited in claim 1, and in particular *"wherein said first well provides an electrical path between said first and second*

active regions regardless of any reasonable voltage applied to said circuit". In view of the above, Applicants submit that the Examiner has failed to show that Schrantz or Spadea, alone or in combination, would have led one of ordinary skill to a structure as recited in claim 1, and in particular *"wherein said first well provides an electrical path between said first and second active regions regardless of any reasonable voltage applied to said circuit".* Accordingly, Applicants respectfully submit that claim 1 is patentable over Schrantz in view of Spadea, and respectfully submit that at least in view of their dependency on claim 1, claims 2, 3 and 4 are patentable over Schrantz in view of Spadea.

Claim 6

The Examiner acknowledges that Schrantz does not disclose *"a plurality of wells of a second conductivity type being partially disposed under said at least two of said plurality of active regions, wherein said plurality of wells of a second conductivity type are separated from said first well"*.

The Examiner states that Maki discloses a semiconductor device comprising N-source/drain regions 4 and P-wells 3b, and asserts that it would have been obvious to one of ordinary skill in the art to dispose the plurality of wells of Maki under the active regions of Schrantz in order to isolate the transistor of Schrantz from other elements. Applicants respectfully disagree.

In response to the previous Action, Applicants had noted that Maki teaches using the P-wells 3b in a structure comprising at least two transistors of a same conduction type, whereas Schrantz is not limited to such a restrictive feature, and had submitted that one of ordinary skill in the art would have been discouraged to look for improvements of the structure of Schrantz in a structure as restrictive as Maki's. Applicants also submitted that it would not be obvious to one skilled in the art that any feature of Maki, such as the P-wells 3b, excerpted from the specific at-least-two-transistors-of-the-same-type environment of Maki, would still operate in Schrantz as described in Maki.

In the present Action, the Examiner opines that "the P-wells 3b (mistyped 3c) complement the element isolation regions 2 to isolate a transistor Q2 from another semiconductor device such as transistor Q1", and opines that "the function of isolation

is not dependent on the conductive type of an adjacent device, and would clearly function as intended (to isolate the transistor) if placed around the transistor of Schrantz".

Applicants respectfully disagree, and note that:

- by reciting in its claims the feature of the structure comprising two transistors of same conduction type, Maki explicitly describes as essential that its structure comprises two transistors of a same conduction type. Applicants respectfully submit that accordingly, one skilled in the art would have lacked motivation to apply the teachings of Maki to the structure of Schrantz, that is not limited to a structure comprising two transistors of same conduction type, at least because this would have meant canceling a feature explicitly disclosed as being essential in Maki;

- it is not certain that "the function of isolation is not dependent on the conductive type of an adjacent device", as opined by the Examiner. Applicants respectfully submit that should a device adjacent Q2 be of the same conductivity type and the same doping as the P-well 3b, the P-well 3b would likely create a diode junction between the adjacent device and the source or drain of Q2, which would likely hinder the isolation provided by isolation region 2;

- the structure of Schrantz, such as illustrated in Figs. 5-8 or 12-15 is actually surrounded by "top gate to bottom gate region 22" such as illustrated in Figs. 1-4, as explicitly recited col. 5, lines 32-35 and col. 7, lines 41-43. Introducing P-wells 3b such as taught by Maki so that they contact the source and drain of Schrantz would result in introducing such P-wells between the source/drain and the top gate to bottom gate region 22. Applicants respectfully submit that such a modification would be internal to the device of Schrantz and could accordingly not function to isolate the structure of device from an adjacent device.

In view of the above, Applicants respectfully submit that the Examiner has failed to show that one skilled in the art would actually have had any motivation to modify the device of Schrantz with the P-wells of Maki, and submit that claim 6 is patentable over Schrantz in view of Maki.

Further, in response to the previous Action, Applicants had noted that Maki

actually recommends using P-wells 3b that are not in contact with the source/drain of Q2, and had noted that even if one of ordinary skill in the art had, despite the motivations not to do so, decided to excerpt some features from Maki and try applying them to Schrantz, and if one skilled in the art had looked for a way to improve the isolation of the transistor of Schrantz from other elements, one would logically have turned to the P-wells of Maki offering the best isolation and would have used the P-wells that do not contact the source/drain and a combination of such wells and of the structure of Schrantz would not have anticipated a structure as recited in claim 6.

In the present Action, the Examiner opines that even though Maki disclosed P-wells that do not contact the drain/source of Q2 that allow to improve the isolation of Q2 and reduce the size of the structure, "since Maki clearly discloses P-wells 3b that contact the source/drain regions, and isolate a transistor from another semiconductor device, it would have been obvious to use such an embodiment in Schrantz's invention". The Examiner also opines that there may also be reasons to use the P-wells that contact the source/drain "that are not expressly disclosed in the specification such as ease of manufacture of producing the P-wells 3b slightly past the element isolation regions 2 versus having the entire P-wells underneath the element isolation regions and not touching the source/drain regions 4".

Applicants respectfully disagree and note that by opining that one skilled in the art would have preferred P-wells contacting the source/drain to P-wells not contacting the source/drain, the Examiner actually opines that one skilled in the art would have overlooked advantages expressly disclosed (reduction of the size, improvement of the isolation) of the P-wells not contacting the source/drain to pursue advantages "not expressly disclosed in the specification" of the P-wells contacting the source/drain. Applicants respectfully note that the Examiner has failed to show under what rationale one skilled in the art would have done so.

Besides, Applicants note that the Examiner opines that the P-wells in contact with the source/drain may be easier to manufacture than the P-wells not in contact with the source/drain. Applicants respectfully disagree and note that the manufacture of the P-wells 3b is described in relation with Fig 4c of Maki, wherein it is shown that P-wells 3b are implanted using mask 14b (col. 8, lines 31-36). Applicants respectfully

submit that one skilled in the art readily understands that providing a mask 14b that allows implanting P-wells 3b that contact the source/drain involves controlling the dimensions and the alignment of mask 14b so that it remains in a determined range away from regions 2. Conversely, providing a mask 14b that allows implanting P-wells 3b that do not contact the source/drain only involves providing a mask 14b that overlaps regions 2, which allows for a much more relaxed control of the dimensions and the alignment of mask 14b. Accordingly, Applicants respectfully submit that contrary to the assertion of the Examiner, it appears that the P-wells in contact with the source/drain would actually be harder to manufacture than the P-wells not in contact with the source/drain. Applicants therefore submit that for this reason also, and considering *arguendo* that one skilled in the art had decided to apply the teachings of Maki in Schrantz despite the technical prejudice for not doing so, one skilled in the art would rather have been motivated to use the P-wells not in contact with the source/drain of Maki, than its P-wells in contact with the source/drain.

Finally, Applicants note that, considering *arguendo* that one skilled in the art had decided to use the P-wells of Maki to improve the isolation of the device of Schrantz, one skilled in the art could only have used P-wells outside the top gate to bottom gate region 22, and such P-wells would necessarily have been without contact with the source/drain of the device of Schrantz, and would not have read on "a plurality of wells of a second conductivity type being partially disposed under said at least two of said plurality of active regions" as recited in claim 6.

In view of the above, Applicants respectfully submit that claim 6 is patentable over Schrantz in view of Maki.

* * *

In view of all of the above, Applicants submit that the application is now in condition for allowance and respectfully urge the Examiner to pass this case to issue.

The Commissioner is authorized to charge any additional fees that may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being deposited with the United States Post Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

February 16, 2006

(Date of Transmission)

Shannon Tinsley

(Name of Person Transmitting)

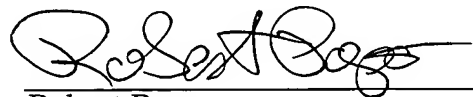


(Signature)

2/16/06

(Date)

Respectfully submitted,



Robert Popa
Attorney for Applicants
Reg. No. 43,010
LADAS & PARRY
5670 Wilshire Boulevard, Suite 2100
Los Angeles, California 90036
(323) 934-2300 voice
(323) 934-0202 facsimile
rpopa@ladasparry.com